

# **Little Deer Project Proposal**

*Goosenest Ranger District, Klamath National Forest*

## **Background**

The Little Deer Project was developed in response to landscape-level ecosystem restoration needs following the 2014 Little Deer Fire on the Goosenest Ranger District of the Klamath National Forest (Forest). Of the possible 4,842 acres of National Forest System land within the project boundary, the Proposed Action will treat 3,370 acres. The Proposed Action is comprised of four treatment types; (1) dead tree removal, (2) hazard tree removal, (3) planting, and (4) felling, hand piling and burning.

The Little Deer Fire began on July 31, 2014 and was contained on August 11, 2014, burning about 5,503 acres. The project boundary follows the fire perimeter excluding sections of private land on the southwestern and northeastern sections of the fire. Treatment is also excluded from private property located within the project area (see attached project maps).

The project is located eight miles west of Bray and about 12 miles southwest of Macdoel, California, in Siskiyou County (Figure 1) in Township 44 North, Range 2 West, Sections 3-10, 16-19; Township 45 North, Range 2 West, Sections 32 and 33; Township 44 North, Range 3 West, Sections 1, 12, 13, and 24, Mt. Diablo Meridian. The project is located within the 5<sup>th</sup> field Butte Creek and Whitney-Sheep Rock watersheds, the 6<sup>th</sup> field Horsethief Creek and Grass Lake watersheds, and the 7<sup>th</sup> field Grass Lake South, Grass Lake Northeast, Upper First Creek, Lower First Creek, Penoyar, and Horsethief Creek watersheds (see Figure 2). Highway 97 runs adjacent to this project and travels through a small piece inside the project area.

## **Management Direction**

Initial direction for this project comes from the Forest Land and Resource Management Plan (Forest Plan) of 1995, as amended. Other laws, plans and policies that provide management guidance or direction for this project include, but are not limited to, the National Fire Plan, the Forest Fire Management Plan, the Endangered Species Act, the National Historic Preservation Act, the Clean Water Act, and the Clean Air Act. The project is designed to be consistent with all applicable laws, policies and plans.

Key guidance for this project comes from the Forest Plan forest-wide management direction and guidance specific to following Management Areas (MA) that are found within the project area, as described in Table 1 below and Figure 3 (attached map). For further information pertaining to the forest plan, please visit the public website.

**Table 1: Management Areas found within the project boundary**

Management Area	Pages in Forest Plan	Acres
Riparian Reserves (MA-10)	4-106 to 4-114	104
Retention Visual Quality Objectives (MA-11)	4-115 to 4-116	1112
Partial Retention Visual Quality Objectives (MA-15)	4-126 to 4-127	1982
Forage (MA-16)	4-128 to 4-130	3422
General Forest (MA-17)	4-131 to 4-132	708

**NOTE: Acres do not account for overlapping management areas.**

In addition to management areas discussed in the Forest Plan, the project area is within the Goosenest Adaptive Management Area. Standard and Guidelines for this area are located on pages 4-133 to 4-137 of the Forest Plan.

There are no northern spotted owl nests, territories or sightings in the project area, nor is there any U.S. Fish and Wildlife Service designated Critical Habitat. There are no northern goshawk or bald eagle nests or territories.

## Existing and Desired Condition

Table 2 below provides a summary of the existing and desired conditions considered during the development of the purpose and need and proposed action.

**Table 2: Existing and Desired Condition**

Purpose and Need Statements	Existing Condition	Desired Condition
1. Limit fuel continuity and reduce fuel loads to minimize unacceptable future fire risk, promoting the successful protection of the public, forest workers, and other valued resources within the project area.	Roadways within the project area surrounded by fire killed and damaged trees and preexisting danger trees pose a hazard to the public and Forest workers.  Without treatment hazards will continue to increase and access may be impeded.	Access to public land along roadways and trailheads are unimpeded. Mitigate hazards from falling danger trees to the greatest extent possible to establish a trajectory towards a safer road system covered by this project.
2. Provide forest products, including firewood, while the wood is still marketable.  3. Obtain the maximum economic value from burned timber by offering a sale while the wood is still marketable.	The fire burned at high severity through most of the project area. This resulted in mortality of a majority of conifers and shrubs within fire perimeter.	Dead or dying trees are harvested to produce wood products as consistent with Forest goals. (Forest Plan, pp. 4-131-132 and 4-49)

Purpose and Need Statements	Existing Condition	Desired Condition
4. Restore the project area to a healthy forested landscape with a diversity of habitat conditions that reflect historical vegetation conditions and the ecological capability of the landscape, including natural openings and native browse species components.	<p>Post-fire vegetation is mostly severely burned coniferous forest interspersed with antelope bitterbrush, manzanita, mountain mahogany, rabbit brush, and various <i>ceonothus</i> species. Additional mortality is expected around the burn perimeter and unburned islands as stressed trees succumb to insects (i.e., western and mountain pine beetle).</p> <p>Areas within the project with tree mortality may be slow to recover due to heavy fuel loading as a result from fallen snags, lack of seed, rocky soil, and limited rain fall may impede conifer development.</p> <p>The fire has reduced forage availability in much of the treatment area: early seral vegetation will not be available for approximately ten years.</p>	<p>The long-term desired future condition for the project area is a healthy forested landscape with diverse ecosystem conditions reflective of the historical vegetation conditions and the ecological capability of the landscape. This includes some natural openings, and native browse species and conifers within a conifer-dominated landscape.</p> <p>In the short term, clumps of leave snags would provide post-fire nesting habitat for a variety of species. In the long term, a varied conifer overstory and understory vegetation components would provide forage and cover for deer and elk.</p> <p>A variety of early and mid seral state grass and forb species should be present within the fire area. Low occurrence of already present weed species should be present as well as no new weed species. Forage availability should be equal to or greater than pre-fire conditions. (Forest Plan, pg. 4-131)</p>
5. Restore scenery conditions within the project area to a conifer-dominant scenic character that is more consistent with historic scenery conditions, while minimizing short-term scenery disturbances to retain a largely natural appearance	<p>The forest canopy currently displays evidence of an unusually large and intense wildfire. The burn area is prominent from several surrounding public viewpoints, both close-up and distant. The fire killed a high percentage of the vegetation within its 5,503 acres, consuming much of the visible canopy, yet some noticeable scattered dense clumps and stringers of green trees currently remain.</p>	<p>Scenery disturbances would be relatively minor as viewed from sensitive public viewpoints. In the short term, views would appear largely natural, including wildfire evidence from clumps of standing snags. In the long term, overall scenery attributes would include a conifer-dominated landscape with native shrub, forb and grass components along with any remaining wildfire evidence. (Forest Plan, pp. 4-115 and 4-126)</p>

## Need for Change

After comparing the existing and desired conditions the following needs were identified:

- There is a need to remove trees killed or severely burned by wildfire to provide safe access to and through the area.
- There is a need to offer a sale while the wood is still marketable because dead forest products lose significant value if left standing beyond two winters.
- There is a need to focus on restoration of the ponderosa pine forest type in order to close the gap between the existing and desired condition, while protecting forest resources.
- There is a need to have fuels conditions that allow for safe direct attack during a wildfire
- There is a need to maintain healthy, vigorous conifer forest on the landscape.
- There is a need to restore the scenic character of the project area.

## **Purpose and Need for Action**

1. Reduce safety hazards, limit fuel continuity, and reduce fuel loads to minimize unacceptable future fire risk, while also promoting the successful protection of the public, forest workers, and other resources within the project area.
2. Provide forest products, including firewood, while the wood is still marketable.
3. Obtain the maximum economic value from burned timber by offering a sale while the wood is still marketable.
4. Restore the project area to a healthy forested landscape with a diversity of habitat conditions that reflect historical vegetation conditions and the ecological capability of the landscape, including natural openings and native browse species components within a conifer-dominated landscape.
5. Restore scenery conditions within the project area to a conifer-dominant scenic character that is more consistent with historic scenery conditions, while minimizing short-term scenery disturbances to retain a largely natural appearance.

## **Proposed Action**

The Proposed Action is designed to meet the purpose and need of the project. The proposed action will treat approximately 3,370 acres across the project area; acres by treatment (as described below) do not account for overlapping treatments types. Treatment acreages are approximate at this stage of project planning and may be adjusted and refined following scoping.

The Proposed Action is comprised of four overlapping treatment types; (1) dead tree removal, (2) hazard tree removal, (3) planting, and (4) felling, hand piling and burning. In addition to the above treatments, the Proposed Action includes access for treatment along 9.71 miles of National Forest roads and 10.09 miles of temporary roads within the project area. A map showing treatment areas for the Proposed Action is displayed in Figure 4. The treatments are described below.

### **Dead Tree Removal (2,993 acres)**

Standing dead trees four inches in diameter at breast height or greater will be removed from the project area. The Forest Service will develop marking guidelines for dead tree removal units based upon Report #RO-11-01 "*Marking Guidelines for Fire-Injured Trees in California*" (Smith and Cluck, May 2011) which used peer-reviewed science for tree species in Northern California. The guidelines provide for a sliding scale of the probability for tree mortality based on percent volume or length of crown scorched by fire. Trees with a 0.7 probability of mortality will be cut and removed, meaning that the Forest Service will harvest trees with a 70 percent or greater chance of dying. Trees will be removed and harvested by whole-tree yarding and ground-based tractor logging systems. Designated areas within the dead tree removal stands will be available for firewood cutters following implementation.

Project design features for wildlife will indicate the number of snags left standing in order to meet forest-wide standards and guidelines. (Forest Plan Standard 8-22, page 4-30). Snags left in each unit will vary based on unit size, shape, and land allocation (Forest Plan Standard 8-23, page 4-30). Retained snags will be left in groups to provide structure and cover for wildlife, as well as allow for protection during post-harvest fuels treatments (Forest Plan Standard 8-24, page 4-30). Landings will be about three quarters of an acre to one acre in size, using existing landings where possible. New landings will be located in relatively flat areas (less than five percent slope) and in natural openings.

### **Hazard Tree Removal (200 acres)**

Throughout treatment units, near landings and along system roads, hazard trees will need to be fallen to ensure forest workers and public safety. Trees within these areas will only be removed if they are identified as a hazard. Hazard trees will be identified using the *Regional Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region* (Report #RO-12-01). Because of safety concerns associated with hazard trees, trees with a 0.6 probability of mortality will be cut, meaning that the Forest Service will remove trees with a 60 percent or greater chance of dying. Roadside hazard trees fallen within tree removal units will be removed from site. Any hazard trees fallen outside of dead tree removal units will be removed, unless they are needed to meet coarse woody debris requirements. Trees will be removed and harvested by whole-tree yarding and ground-based tractor logging systems.

### **Planting (3,370 acres)**

#### ***Reforestation***

Tree planting (or reforestation) will be by hand methods, using either bare root or container stock. Within treatment stands, proposed planting will avoid excessively rocky areas, areas with live trees or natural openings, or areas where trees were not present prior to the Little Deer Fire.

Tree species used for planting will roughly correspond with historical stand composition and will vary by forest type. An average of 100-300 trees per acre will be planted in a mosaic distribution. Planting techniques used to increase survival of planted trees may include, but are not limited to: vexar tubing for browse prevention; shade blocks for improved microsite conditions; and hand grubbing or low ground pressure machinery (to release for survival).

#### ***Browse and Graze Species Planting and/or Seeding***

Planting and/or seeding of browse and graze species will offer both forage and cover to wildlife species. Planting and/or seeding small groupings of various species such as mountain mahogany and antelope bitterbrush will serve as seed sources without allowing fuel continuity. In addition to brush seeding, grass seeding of Idaho fescue and Sandberg Bluegrass should be intermixed in order to help facilitate the natural successional process and help to provide shade for young shrub species. The seeding of these bunch grass species will also provide ground cover that will

prevent invasive species propagation and help to maintain a natural fire regime. Each planting or seeding, will focus in areas where brush species historically occupied the stand.

These site-specific areas will be determined prior to implementation and are not displayed in Figure 3, the Proposed Action Map. In order to allow for vegetative recovery of the burned area, grazing will be minimized using salting methods and herding.

### **Machine and Hand Felling, Hand Piling and Burning**

After treatment, the Forest Service will evaluate the need for fuel treatment within harvest units depending on location on slope, proximity to natural and man-made fire breaks, fuel loading, existing soil cover, and replanting needs. Fuel treatments considered for this project include: felling, by low ground pressure machinery or hand piling, and pile burning.

### **Road Access**

To reduce log skidding distances and associated impacts to soils and other resources, temporary roads may be used on 10.09 miles of existing roadbeds. All roads needed for treatment access will be cleared and graded as necessary to allow log truck and equipment access using minimum disturbance methods and minimum clearing widths. All system roads utilized for this project will receive standard road maintenance. New temporary roads constructed for this project will be graded, out-sloped, covered with slash (if needed), and blocked with natural barriers after the harvest season (prior to the first winter after use). Once the project is completed, the temporary roads will be hydrologically stabilized and closed.

## **Project Design Features**

The Forest Service developed the following project design features to address overall project objectives, to minimize resource impacts, and ensure Forest Plan and/or legal compliance. Table 3 below displays the project design features developed for this project.

**Table 3: Project Design Features**

<b>Design Feature</b>	<b>Description</b>
AIR-1	A wetting agent will be applied as needed to decrease or eliminate dust generated from timber hauling on dirt roads.
AIR-2	Prescribed burning will be conducted in accordance with an approved Burn Plan and an approved Smoke Management Plan. These plans will address mitigations and requirements to minimize impacts of smoke. A Smoke Permit will be requested from the Siskiyou County Air Pollution Control District.
ARCH-1	All proposed activities, facilities, improvements, and disturbances shall avoid archaeological and historic sites. Avoidance means that no activities associated with the project that may affect an archaeological or historic site shall be implemented within the site's boundaries, including any defined buffer zones. Examples of such activities include but are not limited to road maintenance, felling, skidding, and burning.

Design Feature	Description
ARCH-2	All heritage resource sites within the area of potential effect shall be clearly delineated prior to implementing any project activities that have the potential to affect heritage resource sites. This includes but is not limited to flagging site boundaries.
ARCH-3	If any late discoveries sites not previously recorded or human remains are identified during project implementation, work in the immediate area will stop and the District Archaeologist contacted.
FUEL-1	Trees will be whole-tree yarded (trees will be cut in the stand and then skidded to a landing where trees will be limbed, then slash and tops will be piled). Top piles will be removed within two years of being placed at the landing. Residual slash piles from operations will be burned. Slash piles will be burned after merchantable biomass/top piles are removed.
GEO-1	New lava tube or fault caves discovered during unit layout and tree marking will be identified and protected by the 50 foot mechanical equipment exclusion buffer, but may require wider buffers that will be designated by a Cave Coordinator or Wildlife Biologist.
HYDR-1	Riparian Reserves (RRs) are maintained or improved to meet goals of Aquatic Conservation Strategy. RRs in the Project Area include intermittent streams with 170 ft. widths and constructed ponds and wet meadows with 150 ft. widths.
HYDR-2	A 25-foot ground-based equipment exclusion buffer will be maintained around the meadow in the meadow enhancement stand. Equipment may reach into the buffer with a hydraulic boom to remove trees.
HYDR-3	Erosion Control Measures will be maintained for up to 1 year post-installation.
HYDR-4	Existing landings will be shaped to disperse drainage and direct runoff away from watercourses at the time of construction.
HYDR-5	Existing landings will be used to the extent possible if they are not meeting silvicultural objectives.
HYDR-6	Ground-based equipment will avoid disturbing low sagebrush flats where possible.
HYDR-7	Ground-based equipment will be excluded from riparian areas identified on the Management Area Map.
HYDR-8	All treatments except low intensity prescribed fire will be excluded from RRs
HYDR-9	If found, vernal pools will be flagged in a 100 foot radius and identified as a no treatment area.
HYDR-10	Protected equipment exclusion areas will be on the Sale Area Map Temporary roads, riparian reserves, and landing locations will be displayed on Green Cards.
HYDR-11	Landings will be shaped for drainage before the end of the operating season or at the completion of use
HYDR-12	Landings will not be constructed within Riparian Reserves.
HYDR-13	No new temporary roads will be built in Riparian Reserves.
HYDR-14	Rocking of approaches in drafting sites will be used as required. All boards and plastic will be removed after use. Straw bales, rock surfacing and containment dikes will be used at all locations where the possibility of water spill or overflow will result in sediment being moved toward the creek.
HYDR-15	Spill kits will be on site during equipment fueling and lubrication

Design Feature	Description
HYDR-16	The Project is proposed to take place during the normal operating season (NOS) that is defined as May 1 to November 30 and in dry periods outside the NOS. Activities will be restricted during periods of wet weather during the NOS.
HYDR-17	Water drafting will be from existing drafting sites and will be identified on the Sale Area Map.
HYDR-18	Pumps used for drafting will incorporate a mesh screened intake, openings not to exceed 3/16th inch. Portable pumps will be placed on an oil-absorbing mat. During water drafting, operations, stream flows will not be reduced by more than 10 percent at any time. A 25ft ground-based equipment exclusion buffer will be maintained around the meadow. Equipment may reach into the buffer with a hydraulic boom to remove trees.
HYDR-19	Once the project is completed, temporary roads will be hydrologically stabilized and closed.
NNIS-1	Equipment that may contain noxious weed seeds or plant parts will be cleaned of all dirt and debris prior to entering the project area.
NNIS-2	Any hay, straw, or mulch used in this contract will be State of California certified weed-free.
NNIS-3	Any gravel, road mix, or boulders used in the project area will come from a weed free source and/or will be inspected prior to use.
ROADS-1	All temporary roads used for entry will be closed immediately following operations. When multiple entries are necessary for project completion, roads used by contractors will be closed in between each entry. Road closure will include all or a combination of the following activities: (1) placing boulders, earth or log mound barriers to prevent vehicle traffic; (2) subsoiling and outslowing the road surface; (3) installing water bars and other drainage structures; and (4) mulching with native materials (logging slash) or certified weed free straw.
REC/SCEN-1	All live trees will be retained along the burn perimeter and interior portions of the project area, to perpetuate the project area's irregular wildfire burn pattern.
REC/SCEN-2	Irregularly shaped clumps of dead trees (including many of the largest trees) will be retained as standing snags within treatment areas, to provide a natural appearing burn area surface texture. These clumps shall be distributed in irregular patterns throughout these units, typically coinciding with wildlife leave patches.
SOIL-1	Access to skid trails that intersect Forest Roads would be blocked with available material (either large wood or boulders) post-implementation.
SOIL-2	Ground-based logging equipment will be restricted to slopes less than 35 percent and operate according to the Forest's wet weather logging guidelines (WWO).
SOIL-5	No new full bench skid trails will be created.
SOIL-6	If available on site, post-treatment soil cover will range from 60-80 percent depending on slope steepness and soil texture. If post-harvest soil cover is below recommended levels, slash will be left on site to prevent soil erosion.
SOIL-7	Prevent road runoff from draining onto skid trails and or landings.
SOIL-8	Retain existing coarse woody debris (CWD) whenever possible providing the amount of logs to meet fuel management objectives.
SOIL-9	Reuse existing skid trails and landings whenever practical. Dedicate no more than 15 percent of a unit to primary skid trails and landings by good yarding layout and administration.
SOIL-10	Road beds will be closed and hydrologically stabilized upon completion of the project. Road beds will be seeded/planted with appropriate non-invasive grasses and/or planted with bitterbrush, if needed after use.



Design Feature	Description
SOIL-11	Skidding should cease on skid trails when more than 10 percent of a skid trail contains ruts deeper than 6 inches due to saturated soils.
SOIL-12	The Klamath Wet Weather Operation Standards (WWOS) (USDA Forest Service 2002) will be used for all project activities.
SOIL-15	The project is proposed to take place during the normal operating season (NOS) that is defined as April 15 to October 15 and in dry periods outside the NOS with Line Officer approval. Actions will be restricted during periods of wet weather during the NOS.
SOIL-13	Tractor skidding will occur on designated skid trails. Tractors may leave skid trails to access isolated logs if ground conditions permit.
SOIL-14	Waterbar skid trails per Sale Administration Handbook guidelines and as needed. Waterbars can be tree tops on flat areas.
SOIL-15	Small tractor-piling will be limited to no more than 15% of any treatment area.
SOIL-1	Access to skid trails that intersect Forest Roads would be blocked with available material (either large wood or boulders) post-implementation.
SAFE-1	Hazardous trees may be cut when necessary for Forest Service personnel, contractor, or public safety.
SAFE-2	Warning signs will be placed on roads to identify treatment areas as active sale or pile burning areas as needed.
SAFE-3	<p>Planting Safety:</p> <p>In dead tree removal and hand piling and burning units, planting will follow these initial treatments to minimize the risk from hazardous trees in these units.</p> <p>Because planting will be conducted under hazardous conditions, extra precautions will be necessary to successfully complete this task. Potential contractors or planters will be advised of the risk.</p> <p>A designated safety officer will be required to work with the planting crew to evaluate and identify hazardous trees prior to and during planting. Areas of high risk, as identified by the safety officer, should be considered sites that cannot be planted (or areas in which planted trees are unlikely to survive).</p>
WL-1	<p>Snag retention will be consistent with, or exceed the Forest Plan standards and guidelines.</p> <p>Leave snags will be distributed as groupings throughout the stand, and not retained on an individual per acre basis.</p> <p>Leave groups will be distributed throughout treated stands and consist of the largest snags available, situated with large, live trees where possible.</p> <p>Snags or dying trees that contain cat faces, broken or forked tops, hollows or cavities burned out cavities, or those that are otherwise damaged to the degree that a cavity may form will be favored for retention.</p> <p>The total number of snags per acre required within treatment stands may be captured within leave groups.</p>
WL-2	All pre-existing (existing prior to the wildfire) large snags (greater than 14 inches diameter at breast height) will be retained. If any pre-existing snags must be felled, these pre-existing snags will be left on landscape as downed wood.
WL-3	Incense cedar and snags with broken tops will be selected as a high priority for retention.
WL-4	Five to 20 downed logs per acre (of the largest logs available) will be retained.

Design Feature	Description
WL-5	Only trees that meet the definition for a hazard tree in the <i>Regional Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region</i> (Report# RO-12-01) will be cut as hazard trees and removed from alongside roads and landings in the project area, unless needed to meet course woody debris requirements they will be left on site after being fell..

## Project Vicinity, Management Area, Watershed and Proposed Action Maps

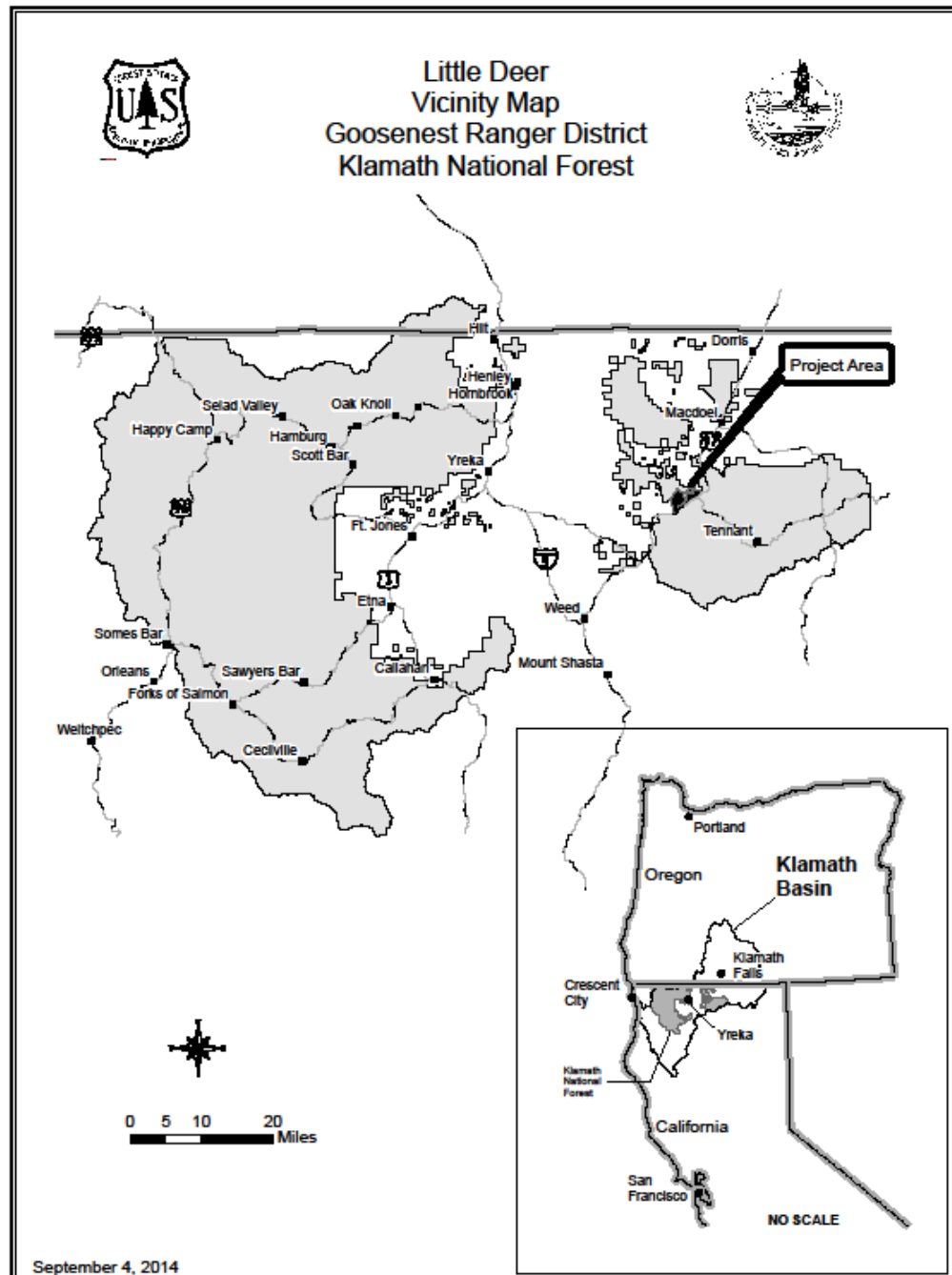


Figure 1: Vicinity Map



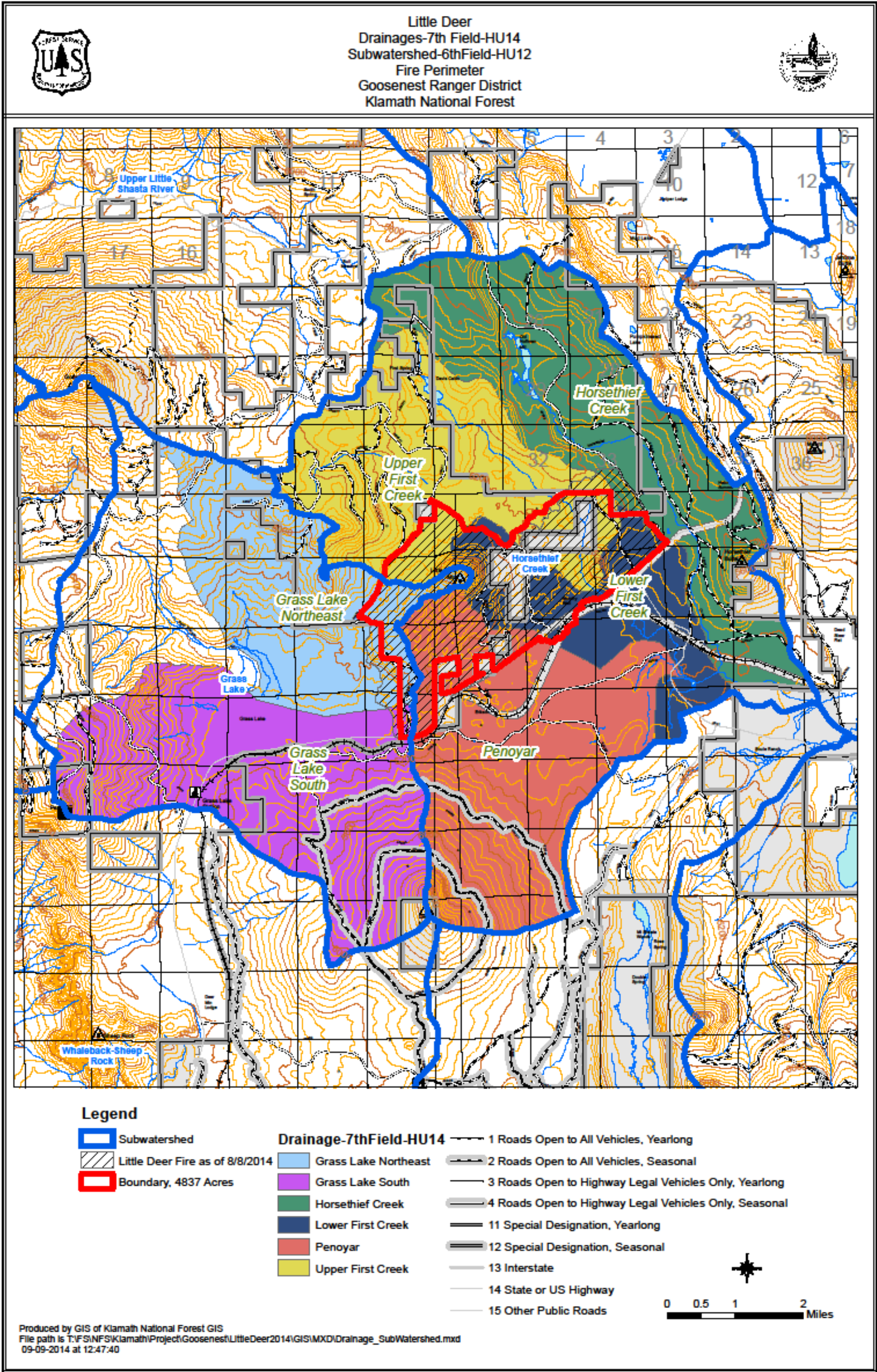


Figure 2: Watersheds within the Little Deer Project



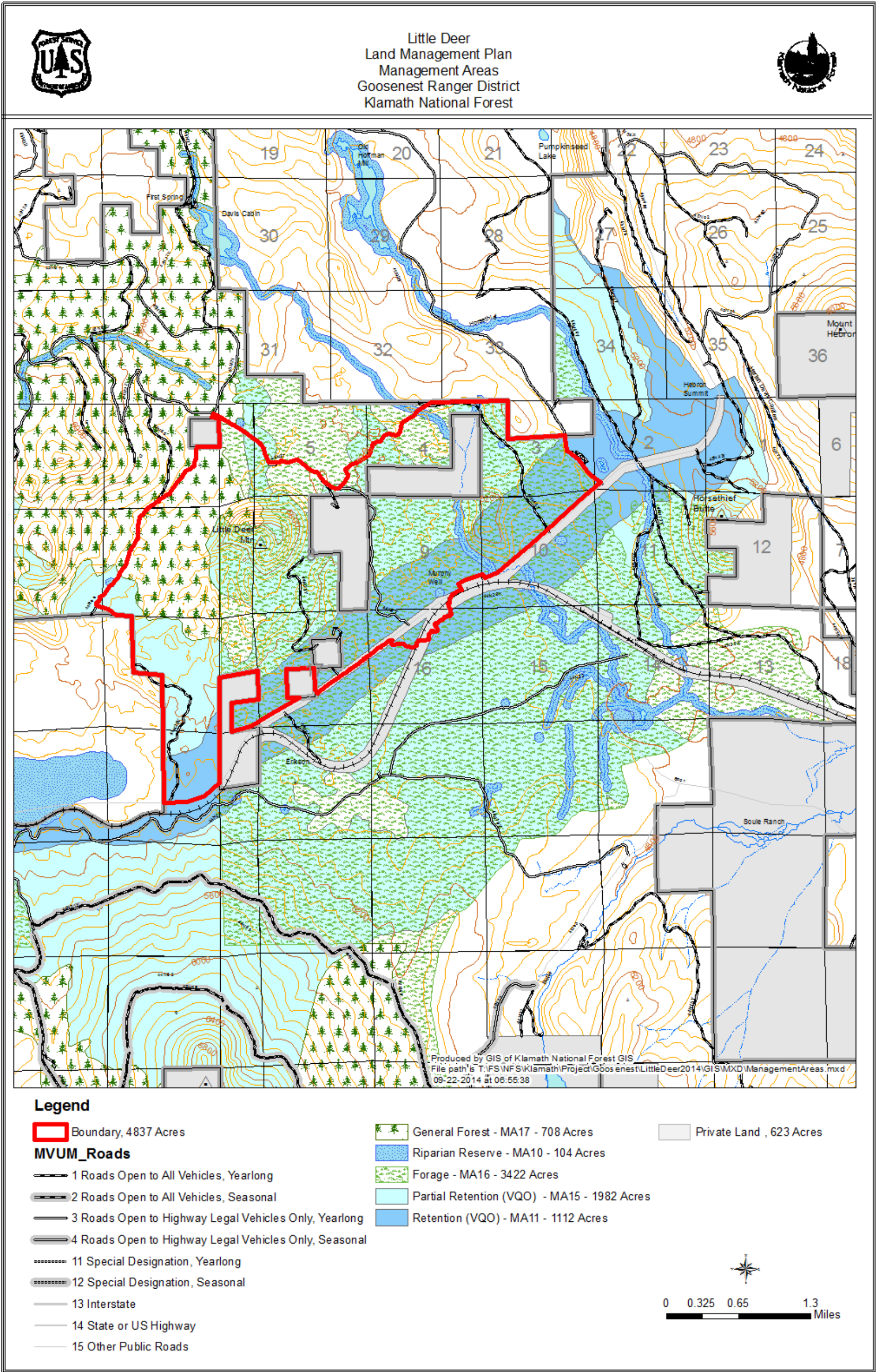


Figure 3: Management areas within the Little Deer Project.



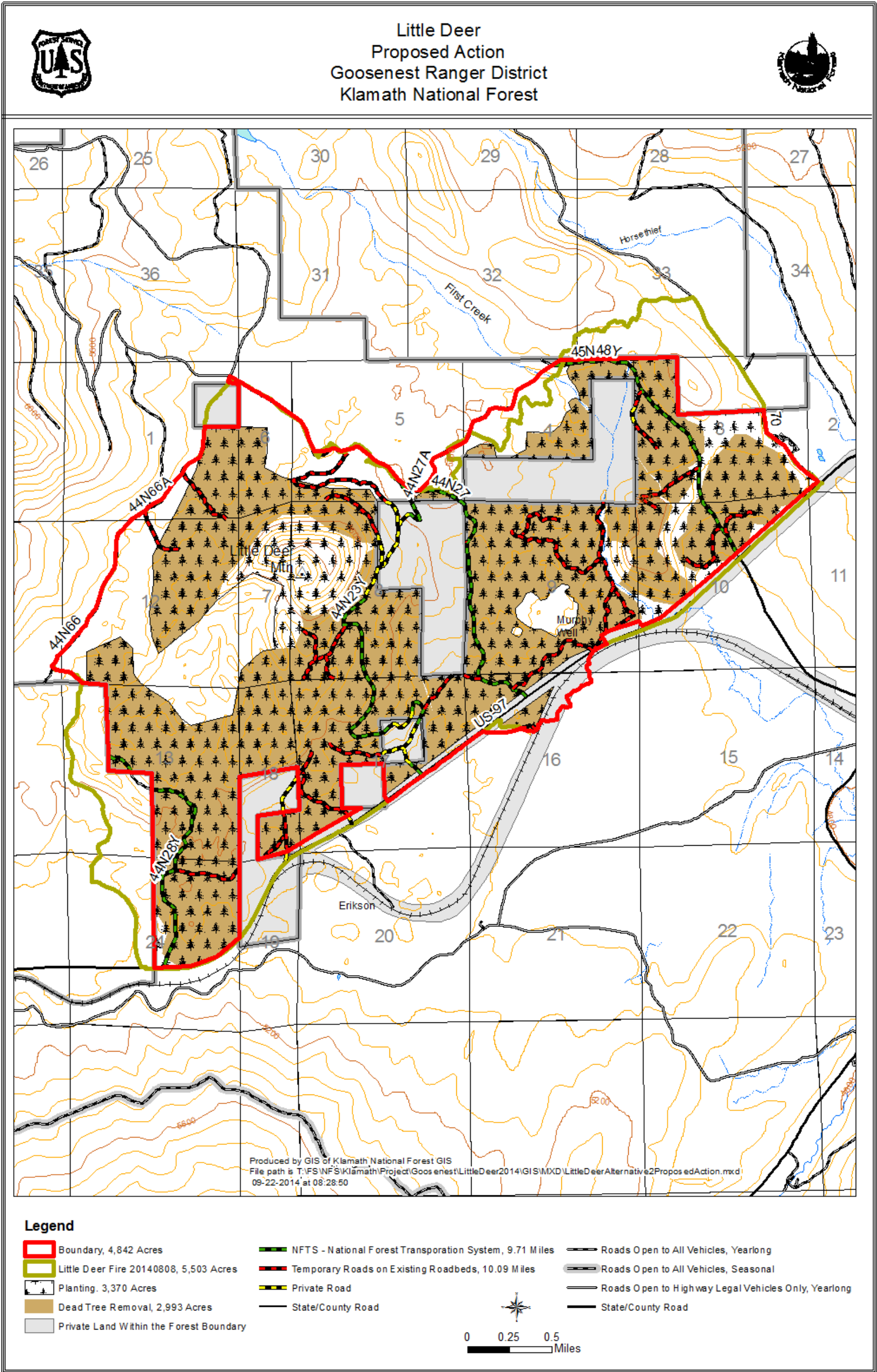


Figure 4: Little Deer proposed treatments